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10/646,704	08/25/2003	Kenichiro Nakamura	0505-1227P	9815

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EXAMINER	
PILKINGTON, JAMES	

ART UNIT	PAPER NUMBER
3682	

NOTIFICATION DATE	DELIVERY MODE
07/16/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/646,704	NAKAMURA ET AL.	
	Examiner	Art Unit	
	James Pilkington	3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *4/11/07*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,8-10 and 16-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,8-10 and 16-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1, 2 and 27 are objected to because of the following informalities:

- Claim 1, delete the word "also" in line 9
- Claim 2, line 4 "a relatively small diameter gear" should be - - the relatively small diameter gear - -
- Claim 27, the examiner suggest removing one of the "extends" found in lines 2 and 3 in the claim and rewording, for example - - a portion of the elastic member extends beyond the cylindrical portion and presses against the plane washer- -

Appropriate correction is required.

2. Claim 21 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 8. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 17, 23 and 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s)

contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Re claims 1, 17, 23 and 26, the specification does not described how the regulating means "regulate an increase of a bending amount of the elastic member by a predetermined value or more." The specification only provides support of regulating the elastic member by a predetermined value only, the predetermined value/amount corresponds to the space 32 (specification page 5 line 31). How is it possible for the elastic member to be regulated to a point greater than (more than) the predetermined value?

Re clms 17, 23 and 26, the original specification and drawings do not describe what is meant by the phrase "substantially equal." Without a disclosure of what is meant by "substantially equal" in the original specification and/or drawings it cannot be reasonably determined by one of ordinary skill in the art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Since drawings are not to scale the only information that can be determined from drawings as originally filed is that the elastic element has a diameter less than an inner diameter of the cylindrical portion and the plane washer has a diameter greater than the inner diameter of the cylindrical portion.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1, 17, 20, 23, 27 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the elastic member" in lines 10-11. There is insufficient antecedent basis for this limitation in the claim.

Claims 17 and 23 recite "an elastic member" in line 6 of claim 17/line 7 of claim 23 and then goes on to claim "regulating means" in line 7 of claim 17/line 8 of claim 23. According to the specification, paragraph 0029, the "regulating means" comprises the "elastic member." Therefore, it is not clear to the examiner if the applicant is now claiming a second elastic member by claiming the elastic member separate from the regulating means. Is there just one elastic member or two? The examiner believes the claim should be written to reflect that the regulating means comprises an elastic member.

Claim 20 recites the limitation "said planar surface" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claims 27 and 28 recite the limitation "when" in lines 1 (of both claims) and 4 (claim 27). There is insufficient antecedent basis for this limitation in the claim as no preceding event has been disclosed. "When" does the event happen?

Claim 28 recites the limitation "... is compressed to a thickness substantially equal to an axial length of the cylindrical portion." It is not clear to the examiner in the claim what axial length the applicant is referring to. Does the applicant mean the outer length of the cylindrical portion or the inner length of the

cylindrical portion? As can be seen in figure 2 the inner axial length is shorter than the outer axial length.

Also in claim 28, the term "substantially" renders the claim indefinite. The term "substantially" is used to define a range above and below a value, in this case "equal to." It is not clear to the examiner how the elastic member can be compressed to a value smaller than "equal to." It appears to the examiner that upon direct contact of the plane washer with the cylindrical portion the elastic member will only be compressed so that it is equal to the inner axial length of the cylindrical portion. How is it possible for the elastic member to be further compressed beyond this point?

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-3, 16-20, and 22-28, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsergas, US PGPub 2004/0031343, in view of Yeh, US PGPub 2002/0124673 (cited in first office action).

Re clms 1-3, Tsergas discloses a gear transmission device comprising:

- A pair of first (134B) and second fixed walls (111B), said first and second fixed walls opposing each other with respect to an axial direction of a first gear shaft (128)

- A first gear (122) positioned on said first gear shaft (128) between the first and second fixed walls (134B and 111B), said gear being axially movable with respect to said first and second fixed walls
- A second shaft (126) having a relatively large diameter gear (136) on a first end and a relatively smaller diameter gear (121) on a second end, with a space (see Figure 2A) separating the relatively larger diameter gear (136) and the relatively small diameter gear (121)
- Wherein said small diameter gear (121) operatively engages said first gear (122)
- A large diameter ring gear (140) operatively engaged with said first gear (122, operatively engaged via gears on shaft 126)

Tsergas does not disclose regulating means positioned between the first gear and the second fixed wall wherein the regulating means includes: a plane washer having one face positioned against a planar surface on an end face of the second fixed wall, a cylindrical portion being formed on a first opposed end face of the first gear, an elastic member positioned between the cylindrical portion and the plane washer, a predetermined space formed between the cylindrical portion and the plane washer, wherein the cylindrical portion is capable of operative contact with said planar end surface of said end wall through direct contact with the plane washer.

Yeh teaches regulating means positioned between a first gear (3) and a fixed wall (9 and end portion of 8, see Figure 3) wherein the regulating means

includes: a plane washer (7) having one face positioned against a planar surface (end portion of 8) on an end face of the second fixed wall (9), a cylindrical portion (formed by groove 42) being formed on a first opposed end face of the first gear (3), an elastic member (5) positioned between the cylindrical portion (outer ring formed by groove 42) and the plane washer (7), a predetermined space (between 7 and end face of 4) formed between the cylindrical portion and the plane washer, wherein the cylindrical portion is capable of operative contact with said planar end surface of said end wall through direct contact with the plane washer (upon compression) for the purpose of providing an impact absorbing device in a gear transmission system (paragraph 0004).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Tsergas and provide regulating means positioned between the first gear and the second fixed wall wherein the regulating means includes: a plane washer having one face positioned against a planar surface on an end face of the second fixed wall, a cylindrical portion being formed on a first opposed end face of the first gear, an elastic member positioned between the cylindrical portion and the plane washer, a predetermined space formed between the cylindrical portion and the plane washer, wherein the cylindrical portion is capable of operative contact with said planar end surface of said end wall through direct contact with the plane washer, as taught by Yeh, for the purpose of providing an impact absorbing device in a gear transmission system.

Re clm 16, Tsergas in view of Yeh discloses that the plane washer (7) is disposed in a postion opposite said cylindrical portion (as disclosed by Yeh above).

Re clm 25, Yeh discloses that one face of the plane washer (7) has a surface area at least as large as that of the end face of the second fixed wall (the washer in Yeh is the same size as that of the fixed wall, end portion of 8, therefore the surface areas are the same).

Re clm 26, Yeh discloses that the outer diameter of the plane washer (7) is substantially equal to the outer diameter of the cylindrical portion (outer ring formed by groove 42) formed on the first gear (3, see Figure 3).

Re clm 27, Yeh discloses that when the cylindrical portion (outer ring formed by groove 42) is not in direct contact with the plane washer (7), a portion of the elastic member (5) extends pressing against the plane washer (7) extends beyond the cylindrical portion, and when the cylindrical portion is in direct contact with the plane washer (7) the elastic member (5) is compressed and no longer extends beyond the cylindrical portion.

Re clm 28, Yeh discloses that when the cylindrical portion (outer ring formed by groove 42) is in direct contact with the plane washer (7), the elastic member (5) is compressed to a thickness substantially equal to an axial length of the cylindrical portion (compresses into the groove 42).

Re clms 17-20 and 22, Tsergas discloses a gear transmission device comprising:

- A pair of first (134B) and second fixed walls (111B), said first and second fixed walls opposing each other with respect to an axial direction of a first gear shaft (128)
- A first gear (122) positioned on said first gear shaft (128) between the first and second fixed walls (134B and 111B), said gear being axially movable with respect to said first and second fixed walls
- A second shaft (126) having a relatively large diameter gear (136) on a first end and a relatively smaller diameter gear (121) on a second end, with a space (see Figure 2A) separating the relatively larger diameter gear (136) and the relatively small diameter gear (121)
- Wherein said small diameter gear (121) operatively engages said first gear (122)
- A large diameter ring gear (140) operatively engaged with said first gear (122, operatively engaged via gears on shaft 126)

Tsergas does not disclose an elastic member positioned between said first gear and said second fixed wall, and regulating means also positioned between the first gear and the second fixed wall, wherein the elastic member has an outer dimension substantially equal to an outer dimension of the second fixed wall, a cylindrical portion being formed on a first opposed end face of the first gear, and said planar surface on the end face of the second fixed wall, wherein the elastic member is surrounded by said planar surface and said cylindrical portion, wherein said cylindrical portion is capable of operative contact with said planar

end surface of the second end wall through the plane washer, and wherein the regulating means includes a plane washer disposed in a position opposite to said cylindrical portion.

Yeh teaches an elastic member (5) positioned between a first gear (3) and a fixed wall (9 and end portion of 8, see Figure 3), and regulating means (washer and groove 42) also positioned between said first gear (3) and fixed wall (9/end of 8), wherein the elastic member (5) has an outer dimension substantially equal to an outer dimension of the fixed wall (5 extends close to the end of the fixed wall therefore it is substantially equal), a cylindrical portion (outer ring formed by groove 42) being formed on a first opposed end face of the first gear (3) and a planar (end portion of 8) surface of the fixed wall, wherein the elastic member (5) is surrounded by said planar surface and said cylindrical portion (see Figure 3), wherein the cylindrical portion is capable of operative contact with said planar end surface of said end wall through direct contact with the plane washer (upon compression), and wherein the regulating means includes a plane washer (7) disposed in a position opposite the cylindrical portion for the purpose of providing an impact absorbing device in a gear transmission system (paragraph 0004).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Tsergas and provide an elastic member positioned between said first gear and said second fixed wall, and regulating means also positioned between the first gear and the second fixed wall, wherein the elastic member has an outer dimension substantially equal to an outer dimension of the second fixed wall, a cylindrical portion being formed on

a first opposed end face of the first gear, and said planar surface on the end face of the second fixed wall, wherein the elastic member is surrounded by said planar surface and said cylindrical portion, wherein said cylindrical portion is capable of operative contact with said planar end surface of the second end wall through the plane washer, and wherein the regulating means includes a plane washer disposed in a position opposite to said cylindrical portion, as taught by Yeh, for the purpose of providing an impact absorbing device in a gear transmission system.

Re clms 23 and 24, Tsergas discloses a gear transmission device comprising:

- A pair of first (134B) and second fixed walls (111B), said first and second fixed walls opposing each other with respect to an axial direction of a first gear shaft (128)
- A first gear (122) positioned on said first gear shaft (128) between the first and second fixed walls (134B and 111B), said gear being axially movable with respect to said first and second fixed walls
- A second shaft (126) having a relatively large diameter gear (136) on a first end and a relatively smaller diameter gear (121) on a second end, with a space (see Figure 2A) separating the relatively larger diameter gear (136) and the relatively small diameter gear (121)

- Wherein said small diameter gear (121) operatively engages said first gear (122)
- A large diameter ring gear (140) operatively engaged with said first gear (122, operatively engaged via gears on shaft 126)

Tsergas does not disclose an elastic member positioned between said first gear and said second fixed wall, and regulating means also positioned between the first gear and the second fixed wall, a cylindrical portion being formed on a first opposed end face of the first gear, and wherein the regulating means includes a plane washer with an outer diameter substantially equal to an outer diameter of the cylindrical portion.

Yeh teaches an elastic member (5) positioned between a first gear (3) and a fixed wall (9 and end portion of 8, see Figure 3), and regulating means (washer and groove 42) also positioned between said first gear (3) and fixed wall (9/end of 8), a cylindrical portion (outer ring formed by groove 42) being formed on a first opposed end face of the first gear (3), and wherein the regulating means includes a plane washer (7) with an outer diameter substantially equal to an outer diameter of the cylindrical portion (see Figure 3) for the purpose of providing an impact absorbing device in a gear transmission system (paragraph 0004).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Tsergas and provide an elastic member positioned between said first gear and said second fixed wall, and regulating means also positioned between the first gear and the second fixed wall, a cylindrical portion being formed on a first opposed end face of the first

gear, and wherein the regulating means includes a plane washer with an outer diameter substantially equal to an outer diameter of the cylindrical portion, as taught by Yeh, for the purpose of providing an impact absorbing device in a gear transmission system.

9. Claims 8-10, 21, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsergas '343 in view of Yeh '673 and further in view of Grant, USP 6,361,257.

Tsergas in view of Yeh discloses all of the claimed subject matter as described above.

Tsergas in view of Yeh does not disclose that the elastic member is a wave washer.

Grant teaches wave washer (10) used as an elastic member for the purpose of providing an elastic member that has improved performance characteristics, in particular, an improved force versus deflection performance (C1/L26-33).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Tsergas in view of Yeh and use a wave washer as the elastic member, as taught by Grant, for the purpose of providing an elastic member that has improved performance characteristics, in particular, an improved force versus deflection performance.

Response to Arguments

10. Applicant's arguments with respect to claims 1-3, 8-10 and 16-28 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Pilkington whose telephone number is (571) 272-5052. The examiner can normally be reached on Monday-Friday 8:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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6/27/07

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